

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A temperature sensor comprising:

a wire comprising a resistance temperature detector (RTD) sensing material wrapped in a plurality of adjacent windings around a second flexible insulated-core wire to form an assembly distributed adjacent windings insulated from the core wire and including separation between adjacent windings to form a flexible assembly, the wire including a first end and a second end and the core wire including a first core end and a second core end, the and wherein a first end of the sensing wire is electrically connected to a the first core end of the core wire, the second core end of the core wire providing a first lead;

an insulated lead wire electrically connected to a the second end of the sensing wire to provide a second lead, the connection having a junction; and

shrink tubing encapsulating the assembly at least the first end and the first core end.

2. (Original) The sensor of claim 1, wherein the height of the sensor is about one-twentieth of an inch.

3. (Original) The temperature sensor of claim 2, wherein the core wire includes braided strands of conductive metal.

4. (Original) The temperature sensor of claim 3, wherein the core wire includes woven fiber glass insulation over the braided strands.

5. (Original) The temperature sensor of claim 4, wherein the wire comprising a sensing material includes one, or a combination of platinum, nickel, a nickel-iron alloy, and copper.

6. (Currently Amended) The temperature sensor of claim 5, wherein the electrical connections to the wires are made using one of soldering and or brazing.

7. (Original) The temperature sensor of claim 6, wherein the sensor further comprises a strain relieving banding strap over the core wire and the second lead wire.

8. (Original) The temperature sensor of claim 7, wherein the banding strap includes brass.

9. (Currently Amended) The temperature sensor of claim 8 7, wherein the banding strap includes steel.

10. (Currently Amended) The temperature sensor of claim 9 7, wherein the banding strap is crimped around the core wire and the insulated lead wire.

11. (Original) The temperature sensor of claim 10, wherein the first and second lead wires exit the sensor at the same end.

12. (Currently Amended) The temperature sensor of claim 11, wherein an insulated lead wire is electrically connected to the second core end of the ~~core~~ wire to provide the first lead.

13. (Original) The temperature sensor of claim 12, wherein a second banding strap is placed around the first and second lead wires.

14. (Original) The temperature sensor of claim 12, wherein the insulated wire leads withstand a five-pound pull force without separating from the assembly.

15. (Currently Amended) A temperature sensor produced by the method comprising:
wrapping a plurality of adjacent windings of a first wire comprising a resistance temperature detector (RTD) sensing material around a flexible insulated core wire to form distributed adjacent windings insulated from the core wire and including separation between adjacent windings, creating a flexible wire wrapped assembly, the first wire including a first end and a second end and the core wire including a first core end and a second core end;

electrically connecting a the first end of the sensing wire to the first core end of the core wire;

providing leads for the temperature sensor by electrically connecting a first insulated lead to the second end of the sensing wire and using the second core end of the core wire as a second lead of the temperature sensor;

placing the wire wrapped assembly into a heat shrinkable polymer material; and

sealing at least the first end and the first core end of the temperature sensor by heating the polymer material.

16. (Currently Amended)The method of claim 15, wherein providing leads includes electrically connecting a second insulated lead to the second core end of the core wire.

17. (Original)The method of claim 16, wherein the method further includes providing mechanical strain relief for the first and second leads.

18. (Original)The method of claim 15, wherein placing the wire wrapped assembly into a heat shrinkable polymer material includes providing a first and a second layer of heat shrinkable tubing, wherein the second layer extends beyond ends of the first layer.

19. (Original)The method of claim 18, wherein the first layer is heated before the assembly is placed into the second layer.

20. (Currently Amended)The method of claim 15, wherein electrically connecting to the sensing wire includes one of soldering and or brazing.

21. (New) A temperature sensor produced by the method comprising:

wrapping a first wire comprising a resistance temperature detector (RTD) sensing material around a flexible core wire, creating a wire wrapped assembly;

electrically connecting a first end to the first core end;

providing leads for the temperature sensor by electrically connecting a first insulated lead to the second end and using the second end as a second lead of the temperature sensor;

placing the wire wrapped assembly into a heat shrinkable polymer material, including providing a first and second layer of heat shrinkable tubing, wherein the second layer extends beyond ends of the first layer; and

sealing the temperature sensor by heating the polymer material.

22. (New) The method of claim 21, wherein the first layer is heated before the assembly is placed into the second layer.